

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of the claims:

1. (Original) A computer system comprising:

an electromagnetic energy source located on a first side of a system board proximate an connector, the electromagnetic energy source for generating electromagnetic energy directed at least toward a second opposing side of the system board; and
an electromagnetic energy detector located on the second side of the system board, the electromagnetic energy detector for detecting a presence of electromagnetic energy when a hot-pluggable component is not mated to the connector and the electromagnetic energy is thereby unobstructed by the hot-pluggable component, the electromagnetic energy detector further for detecting an absence of electromagnetic energy when the hot-pluggable component is mated to the connector and the electromagnetic energy is thereby obstructed by the hot-pluggable component.

2. (Original) The computer system, as recited in claim 1, further comprising a processor for communicating with the electromagnetic energy detector for receiving the detection of the presence or absence of electromagnetic energy by the electromagnetic energy detector.

3. (Original) The computer system, as recited in claim 2, further comprising a hard drive for storing an indication that the hot-pluggable component is absent when the presence of electromagnetic energy is detected, the hard drive further for storing an indication

that the hot-pluggable component is absent when the absence of electromagnetic energy is detected.

4. (Original) The computer system, as recited in claim 3, wherein the electromagnetic energy is infra-red energy, magnetic energy or ultrasonic energy.

5. (Original) The computer system of claim 1, wherein the connector is one of an edge connector, a cable connector, a fibre channel connector, and a USB connector.

6. (Original) A computer system comprising:
a means for generating electromagnetic energy located on a first side of a system board proximate a connector, the electromagnetic energy directed at least toward a second opposing side of the system board; and
a means for detecting electromagnetic energy located on the second side of the system board, the means for detecting electromagnetic energy detecting a presence of electromagnetic energy when a hot-pluggable component is not mated to the connector and the electromagnetic energy is thereby unobstructed by the hot-pluggable component, the means for detecting electromagnetic energy further detecting an absence of electromagnetic energy when the hot-pluggable component is mated to the connector and the electromagnetic energy is thereby obstructed by the hot-pluggable component.

7. (Original) The computer system, as recited in claim 6, further comprising a processing means for communicating with the means for detecting electromagnetic energy,

the processing means for receiving the detection of the presence or absence of electromagnetic energy by the means for detecting electromagnetic energy.

8. (Original) The computer system, as recited in claim 7, further comprising a means for storing an indication that the hot-pluggable component is absent when the presence of electromagnetic energy is detected and further for storing an indication that the hot-pluggable component is absent when the absence of electromagnetic energy is detected.

9. (Original) The computer system of claim 6, wherein the connector is an edge connector.

10. (Original) A computer system comprising:
a first electromagnetic energy source located on a first side of a system board proximate a first end of a connector, the first electromagnetic energy source for generating electromagnetic energy directed at least toward a second side of the system board opposing the first electromagnetic energy source;

 a second electromagnetic energy source located on the first side of the system board proximate a second end of the connector, the second electromagnetic energy source for generating electromagnetic energy directed at least toward the second side of the system board opposing the second electromagnetic energy source;

 a first electromagnetic energy detector located on the second side of the system board, the first electromagnetic energy detector for detecting a presence of electromagnetic energy from the first electromagnetic energy source when a hot-pluggable component is not mated to the connector and the electromagnetic energy from the first electromagnetic energy source is thereby unobstructed by the hot-pluggable component, the first electromagnetic

energy detector further for detecting an absence of the electromagnetic energy from the first electromagnetic energy source when the hot-pluggable component is mated to the connector and the electromagnetic energy from the first electromagnetic energy source is thereby obstructed by the hot-pluggable component;

a second electromagnetic energy detector located on the second side of the system board, the second electromagnetic energy detector for detecting a presence of electromagnetic energy from the second electromagnetic energy source when the hot-pluggable component is not mated to the connector and the electromagnetic energy from the second electromagnetic energy source is thereby unobstructed by the hot-pluggable component, the second electromagnetic energy detector further for detecting an absence of the electromagnetic energy from the second electromagnetic energy source when the hot-pluggable component is mated to the edge connector and the electromagnetic energy from the second electromagnetic energy source is thereby obstructed by the hot-pluggable component.

11. (Original) The computer system of claim 10, wherein the connector is an edge connector.

12. (Original) A method for detecting the presence of a hot-pluggable component in a computer system comprising the steps of:
generating electromagnetic energy on a first side of a system board proximate a connector, the electromagnetic energy directed at least toward a second opposing side of the system board;

detecting a presence of the electromagnetic energy on the second side of the system board when the hot-pluggable component is not mated to the connector and the electromagnetic energy is thereby unobstructed by the hot-pluggable component; and

detecting an absence of electromagnetic energy on the second side of the system board when the hot-pluggable component is mated to the connector and the electromagnetic energy is thereby obstructed by the hot-pluggable component.

13. (Original) The method, as recited in claim 12, further comprising the step of communicating the detected presence or absence of electromagnetic energy to a processor.

14. (Original) The method, as recited in claim 13, further comprising the steps of:

storing an indication that the hot-pluggable component is absent when the presence of electromagnetic energy is detected; and

storing an indication that the hot-pluggable component is present when the absence of electromagnetic energy is detected.

15. (Original) The method, as recited in claim 12, further comprising the step of locating a material which is impervious to the electromagnetic energy at a position on the hot-pluggable component so that the material obstructs the electromagnetic energy when the hot-pluggable component is mated to the connector.

16. (Original) The method, as recited in claim 12, wherein the step of generating the electromagnetic energy comprises the step of generating a beam of electromagnetic energy directed toward the second opposing side of the system board.

17. (Currently Amended) TheA method for detecting the presence of a hot-pluggable component comprising:

generating electromagnetic energy on a first side of a system board proximate a connector, the electromagnetic energy directed at least toward a second opposing side of the system board;

detecting a presence of the electromagnetic energy on the second side of the system board when the hot-pluggable component is not mated to the connector; and

detecting an absence of electromagnetic energy on the second side of the system board when the hot-pluggable component is mated to the connector, as recited in claim 12,

wherein the step of generating the electromagnetic energy comprises the step of generating a plurality of independent beams of electromagnetic energy directed toward the second opposing side of the system board, a source of each of the plurality of beams located progressively more distant from the system board; and

further wherein the steps of detecting the presence or absence of the electromagnetic energy comprises the step of independently detecting the presence or absence of each of the plurality of beams on the second side of the system board, a detector of each of the plurality of beams located progressively more distant from the system board, the plurality of beams sequentially becoming obstructed as the hot-pluggable component is mated to the connector and the electromagnetic energy is obstructed by the hot-pluggable component and the beams sequentially becoming unobstructed as the hot-pluggable component is removed from the connector and the electromagnetic thereby becomes unobstructed by the hot-pluggable component indicating the approach or retreat of the hot-pluggable component respectively.

18. (Original) The method, as recited in claim 12, wherein the electromagnetic energy is infra-red energy.

19. (New) A computer system comprising:

a first electromagnetic energy source located on a first side of a system board proximate a first end of a connector, the first electromagnetic energy source for generating electromagnetic energy directed at least toward a second side of the system board opposing the first electromagnetic energy source;

a second electromagnetic energy source located on top of the first electromagnetic energy source, the second electromagnetic energy source for generating electromagnetic energy directed at least toward the second side of the system board opposing the second electromagnetic energy source;

a first electromagnetic energy detector located on the second side of the system board, the first electromagnetic energy detector for detecting a presence of electromagnetic energy from the first electromagnetic energy source when a hot-pluggable component is not mated to the connector and for detecting an absence of the electromagnetic energy from the first electromagnetic energy source when the hot-pluggable component is mated to the connector; and

a second electromagnetic energy detector located on top of the first electromagnetic energy detector, the second electromagnetic energy detector for detecting a presence of electromagnetic energy from the second electromagnetic energy source when the hot-pluggable component is not mated to the connector and for detecting an absence of the electromagnetic energy from the second electromagnetic energy source when the hot-pluggable component is mated to, approaching or retreating from the edge connector and the electromagnetic energy from the second electromagnetic energy source is thereby obstructed by the hot-pluggable component.